EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 2002051595
PUBLICATION DATE : 15-02-02

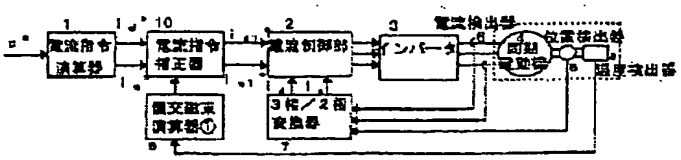
APPLICATION DATE : 01-08-00
APPLICATION NUMBER : 2000232681

APPLICANT : FUJI ELECTRIC CO LTD;

INVENTOR : ISHII SHINICHI;

INT.CL. : H02P 21/00 H02P 6/06

TITLE : MOTOR CONTROLLER



ABSTRACT : PROBLEM TO BE SOLVED: To suppress the torque fluctuation of a motor caused by temperature.

SOLUTION: For controlling a motor 4 in which a temperature detector 8 and a position detector 5 are incorporated as sensors, a computing unit 9 which estimates the magnetic flux of the motor 4 by computation based on the temperature detected by means of the temperature detector 8, and a current command correcting device 10 which performs prescribed correction on the current which causes the motor 4 to generate torque based on the estimated value of the magnetic flux, are provided. The motor 4 is made to generate torque that is not affected by temperature fluctuation by controlling the motor 4 by using the output of the correcting device 10 as a new current command value.

Patent Abstracts of Japan

PUBLICATION NUMBER : 2000224812
PUBLICATION DATE : 11-08-00

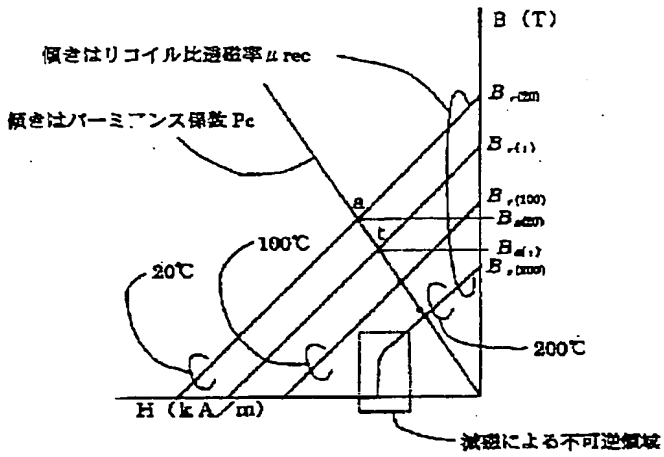
APPLICATION DATE : 29-01-99
APPLICATION NUMBER : 11021051

APPLICANT : TOYO ELECTRIC MFG CO LTD;

INVENTOR : NAKAMURA MASANORI;

INT.CL. : H02K 11/00 H02P 21/00

TITLE : CONTROL OF PERMANENT-MAGNET ROTATING ELECTRIC MACHINE



ABSTRACT : PROBLEM TO BE SOLVED: To prevent the precision of torque from worsening by providing a means for measuring or estimating the temperature of a permanent magnet, and correcting the variation of interlinking magnetic flux based on the temperature coefficient of the residual magnetic flux density of the permanent magnet by d-axis current control.

SOLUTION: A change of the residual magnetic flux density of a magnet by its temperature is formed by a temperature coefficient being a magnetic characteristic of the magnet. When the temperature of the magnet is 20°C, its residual magnetic flux density is Br(20), and an interlinking magnetic flux density is Ba(20), when the operating point of the rotating electric machine at a permeance coefficient Pc is at point (a). When the temperature of the magnet becomes t°C, the residual magnetic flux density becomes Br(t), and the operating point moves to point (t) and the interlinking magnetic flux density changes to Ba(t). Besides, the variation of the interlinking magnetic flux by a temperature change can be compensated by controlling a d-axis current by measuring or estimating the temperature of the magnet, even if the rotating electric machine to be operated by interlinking magnetic flux φa at a certain design temperature changes to φa (t). Consequently, it becomes possible to make its torque constant.

Patent Abstracts of Japan

PUBLICATION NUMBER : 2002165478
PUBLICATION DATE : 07-06-02

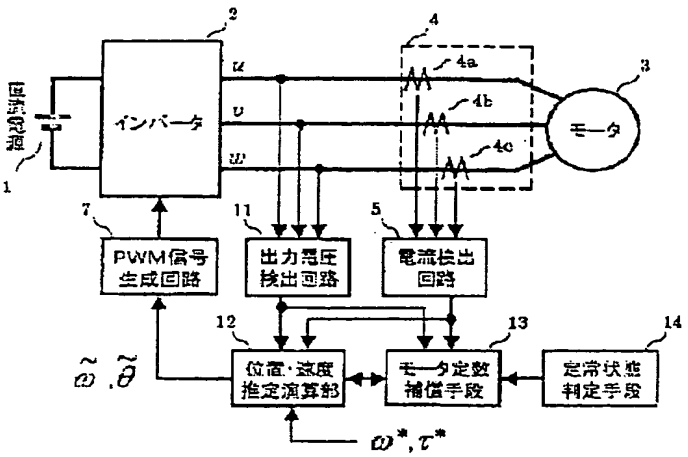
APPLICATION DATE : 24-11-00
APPLICATION NUMBER : 2000357286

APPLICANT : MATSUSHITA ELECTRIC IND CO LTD;

INVENTOR : KAWACHI MITSUO;

INT.CL. : H02P 6/06 H02P 5/00

TITLE : MOTOR CONTROLLER



ABSTRACT : PROBLEM TO BE SOLVED: To provide a motor controller for estimating the rotor magnetic pole position or rotating angular velocity in order to improve, on the rear-time basis, estimation accuracy by compensating for change of motor constant due to temperature rise during operation, and to realize the stable motor drive system.

SOLUTION: A motor constant compensating means compensates for the change of motor constant, using any one of a motor current or a motor voltage corresponding to an output signal of a steady-state determining means for determining whether the operating condition reaches the steady state. A position/ velocity estimating and calculating means estimates the magnetic pole position of a rotor or a rotational angular velocity, based on the motor constant and then outputs it to a PWM signal generating circuit. By using the estimation accuracy can be improved, using the compensated motor constant, and thereby highly accurate velocity and torque control can be realized.